



DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

David Silvester, District Engineer

Tracker

MEASURES OF DEPARTMENTAL PERFORMANCE



MoDOT customers expect transportation solutions delivered on time and within budget. We manage our projects to get them completed quickly and at the best possible value. We work with our transportation partners to leverage innovation in improving our products and how we work. We pledge to honor our commitments and deliver the best, most cost-effective solutions.

RESULT DRIVER:
David Silvester,
District Engineer

DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

MEASUREMENT
DRIVER:
Renate Wilkinson,
Planning and Programming
Engineer

PURPOSE OF
THE MEASURE:
This measure determines
how close total project
completion costs are to the
programmed costs. The
programmed cost is consid-
ered the project budget.

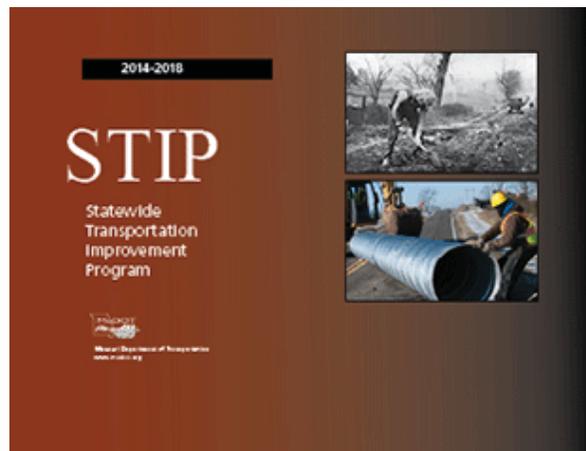
MEASUREMENT
AND DATA
COLLECTION:
The completed project
costs are reported during
the fiscal year in which the
project is completed. Road
and bridge project costs
include design, right-of-
way purchases, utilities,
construction, inspection
and other miscellaneous
costs. The programmed
cost is based on the amount
included in the most re-
cently approved Statewide
Transportation Improvement
Program. Completed costs
include actual expendi-
tures. Multimodal and Local
Public Agency project costs
typically reflect state and/or
federal funds, but not local
funding contributed toward
projects.

Percent of programmed project cost as compared to final project cost-4a

The focus on accurate program cost estimates has become increasingly important due to decreasing transportation funding and increasing costs. As of March 31, 2014, 294 projects had been completed in fiscal year 2014 at a cost of \$719 million. This represents a deviation of -11.3 percent or \$91 million less than the programmed cost of \$810 million. Of the 294 projects completed, 71 percent were completed within or below budget. In comparison, 72 percent of projects were completed within or below budget as of the same date a year ago. The largest component of project savings comes from award savings, at 91 percent. Engineering and miscellaneous (right of way, utilities and other costs) savings represent 18 and 11 percent, respectively. Construction phase costs were 20 percent over what was awarded.

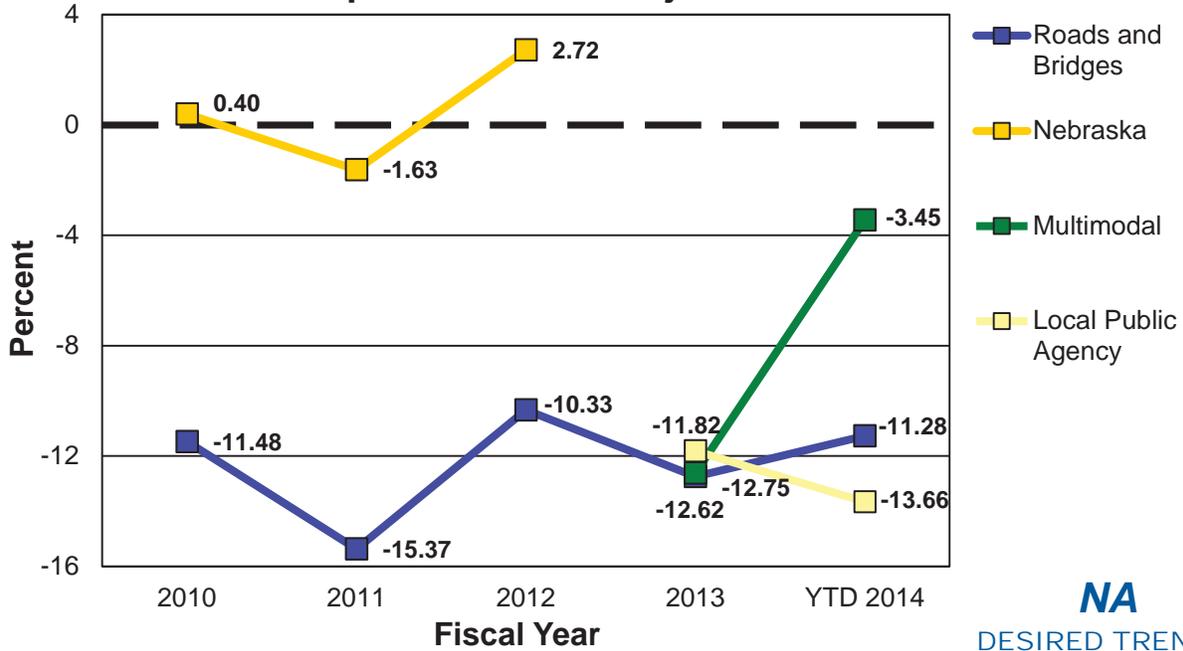
In addition, 41 Multimodal projects were completed for a cost of \$29.2 million, -3.5 percent or \$1 million less than the programmed cost of \$30.2 million. And 110 Local Public Agency projects were completed for a cost of \$55.2 million, -13.7 percent or \$9 million less than the programmed cost of \$64 million.

MoDOT uses this historical data as a guide for programming future projects. In FY 2014, MoDOT added 10 percent of available funding for highway and bridge construction awards or \$68.5 million worth of projects in anticipation of award savings. However, award savings to date for FY 2014 are averaging only 1 percent. Future programming assumptions will be revised downward to reflect this trend.



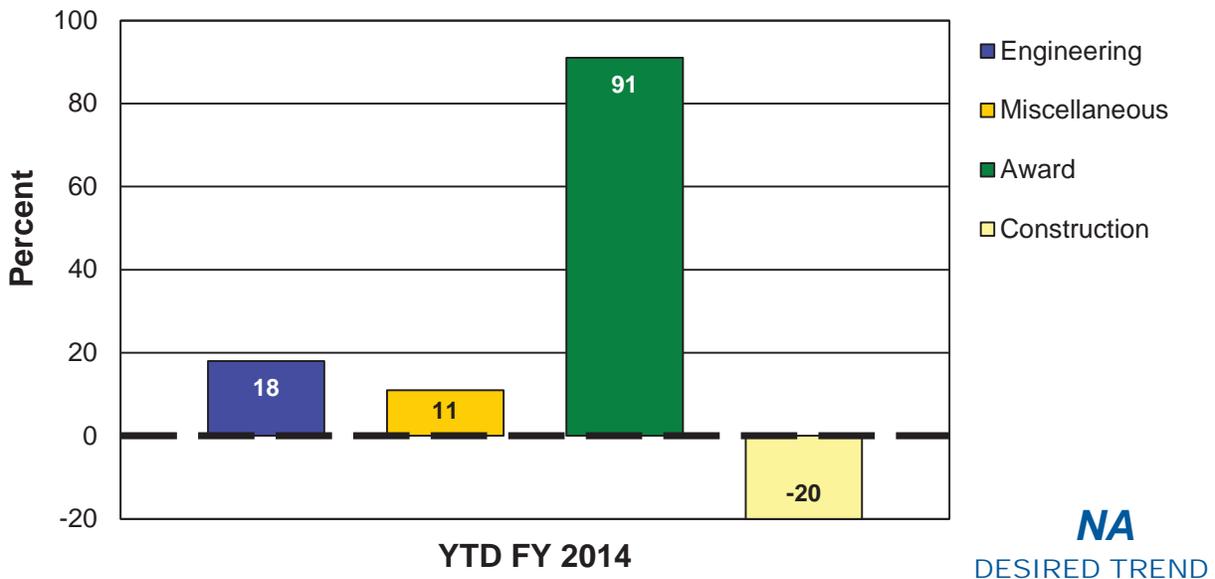
DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

Percent of Programmed Project Cost as Compared to Final Project Cost



Positive numbers indicate the final (completed) cost was higher than the programmed cost. Comparative data is from Nebraska Department of Roads, one-year schedule of highway improvement projects.

Composition of Savings



Positive numbers indicate savings. Miscellaneous includes right of way, utilities, and other costs.

RESULT DRIVER:
David Silvester,
District Engineer

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MEASUREMENT DRIVER:

Jay Bestgen, Assistant
State Construction and
Materials Engineer

PURPOSE OF THE MEASURE:

This measure tracks the percentage of projects completed by the commitment date established in the contract. This includes road, bridge, local public agency and multimodal projects – rail, aviation, waterway and transit.

MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, the project manager collaborates with the project team to establish the project completion date, and the resident engineers use the SiteManager system to track and document the work. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance.

Percent of projects completed on time-4b

MoDOT's customers expect transportation improvements to be completed quickly with minimal impact to their lives. Delivering projects by the contract completion date is the target for all projects and this is considered a commitment to Missourians and users. Completing projects on time helps maintain credibility which is of utmost importance to maintaining Missourians long-term support for times when more resources are needed to adequately maintain the transportation system. Completing projects on time minimizes users' exposure to work zones and provides facilities in good condition that improve safety and reduce vehicle maintenance costs.

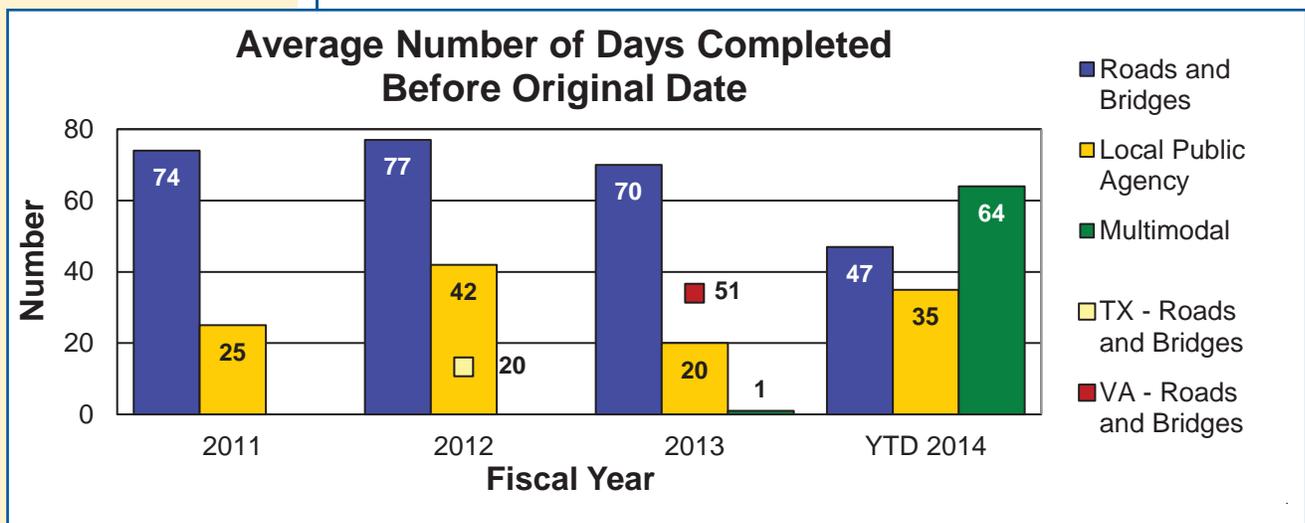
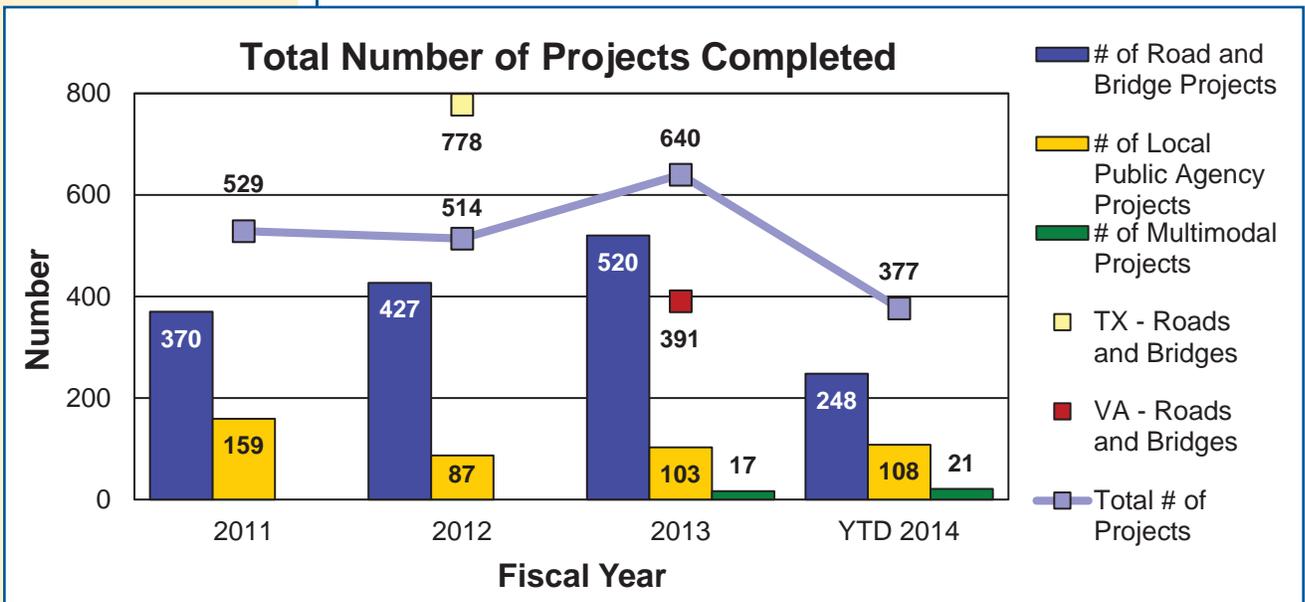
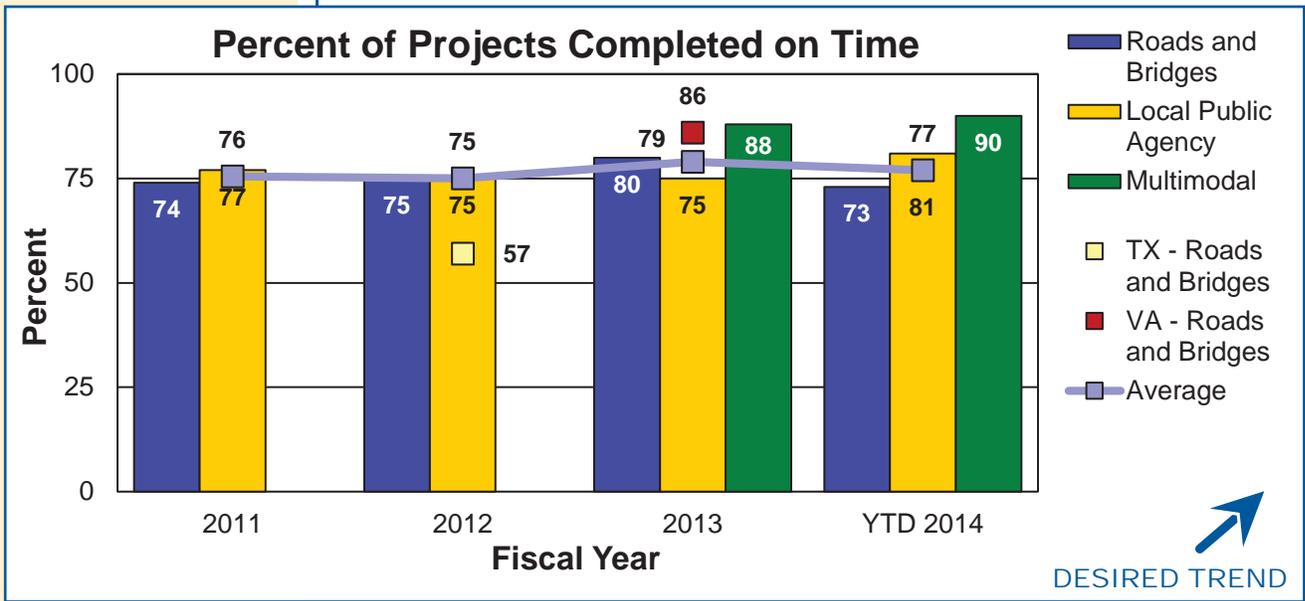
Sometimes, unusual weather or additional contract work necessitates an extension of the completion date. There are also times when a contractor misses the project completion date. In the third quarter of fiscal year 2014, 77 percent of the projects were completed on or ahead of schedule.

MoDOT works to meet the original completion date by:

- Preparing accurate plans and quantities,
- Setting aggressive, but reasonable completion dates,
- Setting liquidated damages that reinforce completion date without undue bid risks,
- Discussing potential completion times with industry before setting, and
- Negotiating with contractor to maintain schedule.



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RESULT DRIVER:
David Silvester,
District Engineer

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MEASUREMENT DRIVER:

Jeremy Kampeter,
Construction Management
Systems Administrator

PURPOSE OF THE MEASURE:

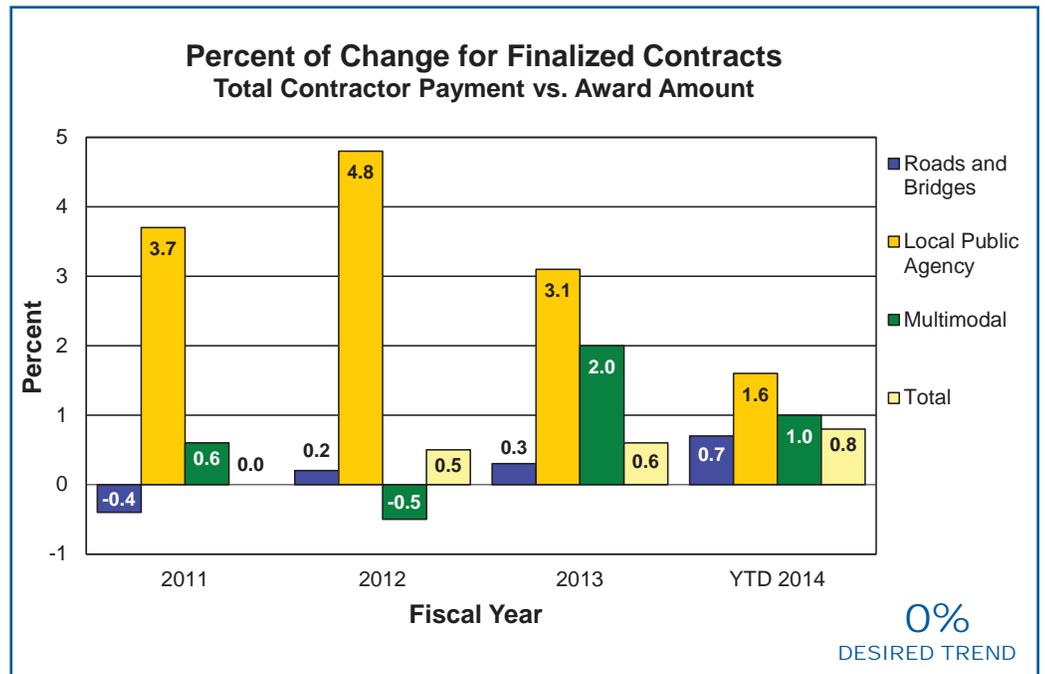
This measure tracks the percentage difference of total construction payouts to the original contract award amounts. This indicates how many changes are made on projects after they are awarded to the contractor. This measure evaluates road, bridge, local public agency and multimodal projects – rail, aviation, waterway and transit.

MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, contractor payments are generated through MoDOT’s SiteManager database and processed in the financial management system for payment. Change orders document the underrun/overrun of the original contract cost. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance.

Percent of change for finalized contracts-4c

By limiting overruns on contracts, MoDOT can continue to keep its commitments. Decreasing transportation funding coupled with the increasing costs of products such as asphalt, concrete and steel has placed an even stronger emphasis on constructing projects within budget. This emphasis combined with the use of practical design and value engineering has contributed to limiting overruns on contracts. MoDOT’s performance in the first three quarters of fiscal year 2014 was 0.8 percent (\$640 million worth of projects completed \$4.8 million over the award amount). Many factors can affect the ability to complete a project within two percent of the award amount.



RESULT DRIVER:
David Silvester,
District Engineer

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MEASUREMENT
DRIVER:
Angela Fuerst,
Transportation Project
Manager

PURPOSE OF
THE MEASURE:
This measure tracks the
use of innovative con-
tracting methods used on
MoDOT projects including:
■ Incentive/Disincentive
Contracts,
■ A + B Contracts,
■ Add Alternate Contracts,
■ Alternate Technical
Concepts, and
■ Design-Build Contracts

MEASUREMENT
AND DATA
COLLECTION:
MoDOT projects utiliz-
ing innovative contracting
methods are reported dur-
ing the fiscal year they are
awarded. Contract award
values are collected through
MoDOT's SiteManager
database, bid opening sum-
maries and project records.

Innovative contracting methods-4d

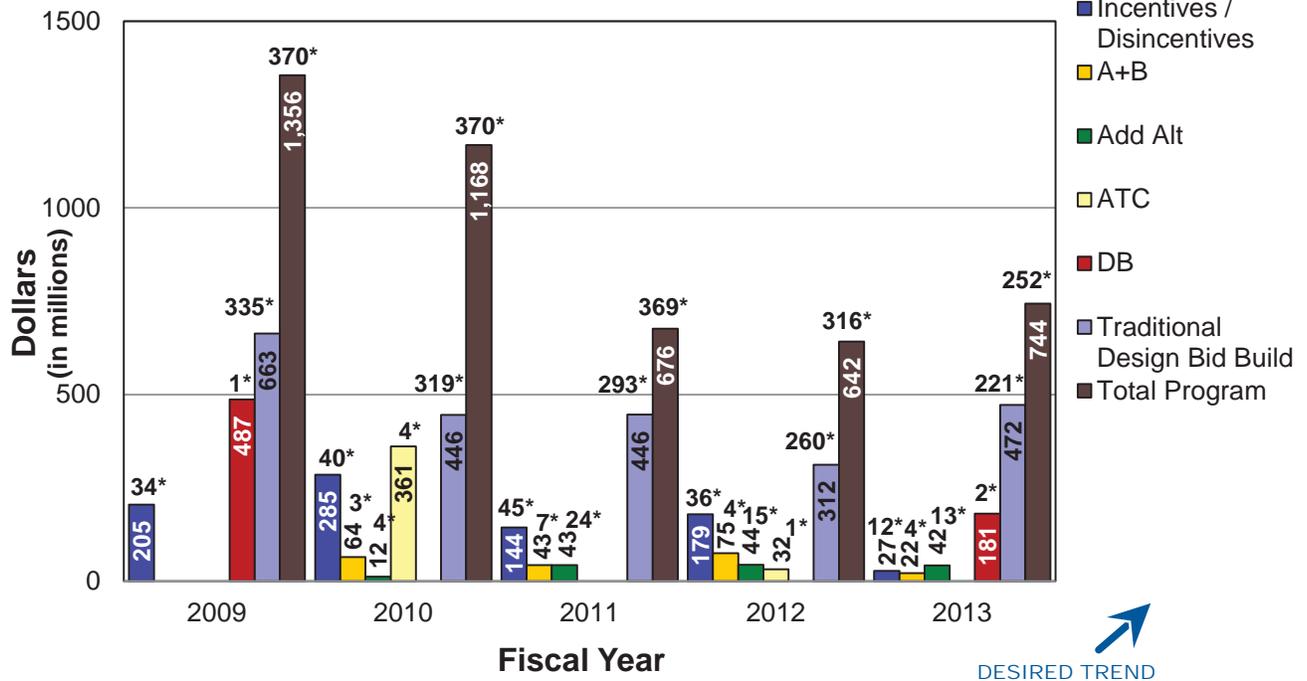
With decreasing transportation funding and increasing costs, MoDOT looks to implement non-traditional methods and practices in contract administration to improve efficiency, increase flexibility and maximize value for its customers. By promoting the use of innovative contracting tools, MoDOT is better able to mitigate declining resources and meet each project's unique challenges and to provide the best-value solution to the needs being addressed. MoDOT uses innovative contracting to ensure the public receives full value for every tax dollar invested in Missouri's transportation system. However, dwindling resources will result in a dramatic reduction in the number of large-scale, system-improvement projects MoDOT can afford. Even with innovative contracting techniques, MoDOT will be challenged to simply maintain the current system.

In fiscal year 2013, MoDOT delivered 31 out of 252 projects using innovative contracting methods. The 31 projects accounted for \$271 million of the \$743 million program.



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Innovative Contracting Methods



* Reflects total number of projects for each innovative contract method

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District Engineer

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MEASUREMENT
DRIVER:
Llans Taylor,
Innovations Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the
use of value engineering
during design and construc-
tion on traditional MoDOT
projects including:
■ Value analysis during the
design phase, and
■ Construction value en-
gineering proposals during
the construction phase.

MEASUREMENT
AND DATA
COLLECTION:
Information on value
analysis during design is
gathered from MoDOT's
STIP Information Manage-
ment System application.
Construction value engi-
neering change proposal
information is gathered from
MoDOT's value engineering
change proposal database.

Value Engineering-4e

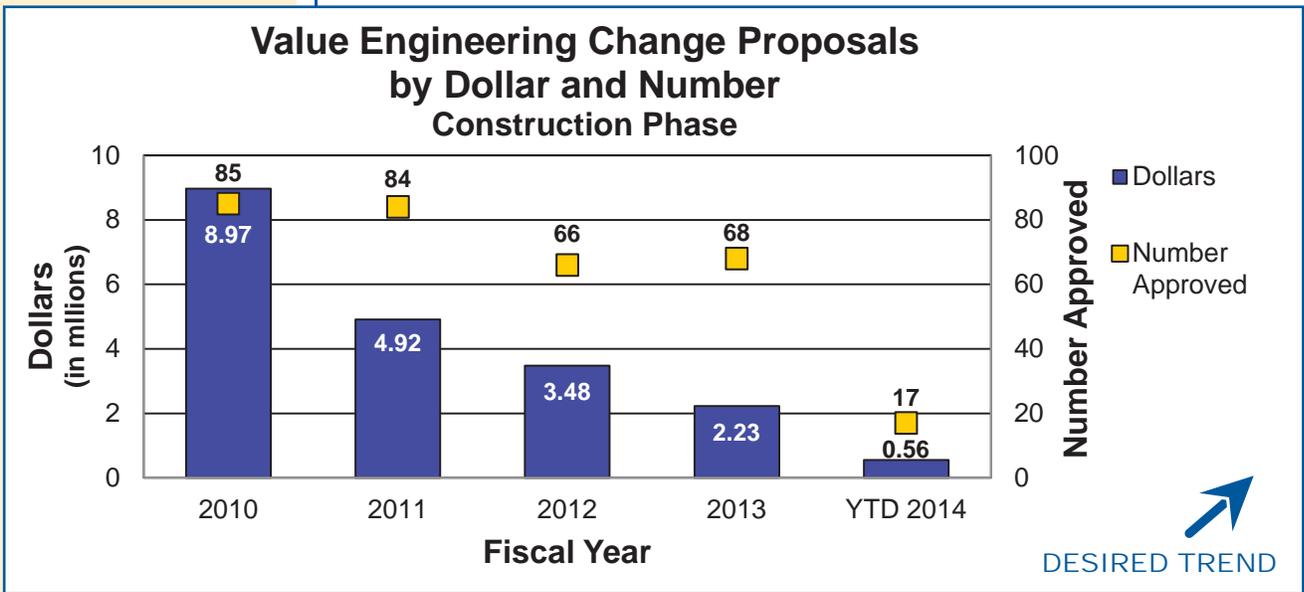
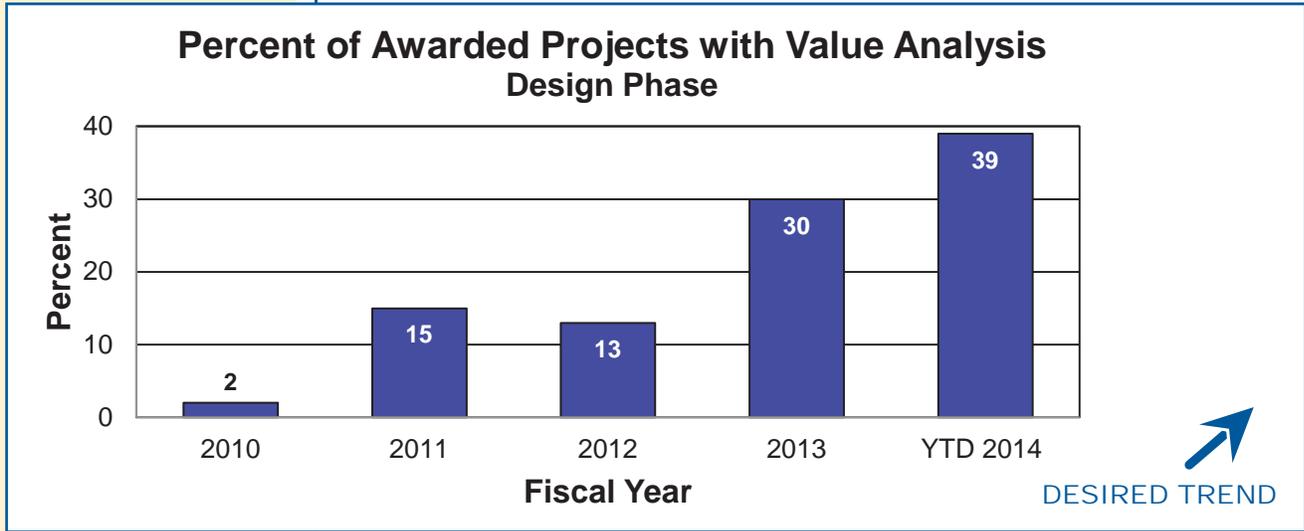
The goal of value engineering is to build the right project at the right time, meeting the project need with appropriate project scope. MoDOT uses the VE program to ensure the public receives great value for every tax dollar invested in Missouri's transportation system. Due to decreasing funding, MoDOT is increasingly focused on smaller, maintenance-type projects that are not traditionally targeted by the VE program. Still, MoDOT must be innovative in utilizing the VE process to search for innovative solutions to reduce project costs and provide additional value.

MoDOT uses design phase value analysis to remove unnecessary scope, reduce project costs and to improve project flexibility. Value analysis includes specific, targeted processes aimed to improve the project value, including the formal VE program studies. Tracking progress toward the goal of evaluating all projects for value allows MoDOT to accurately gauge its performance. So far, for fiscal year 2014, 39 percent of projects underwent some form of value analysis during the design phase.

MoDOT partners with industry to find more cost effective methods to accomplish the proposed work on our projects in order to better use our limited available funds. During the construction phase, the Value Engineering Change Proposal process encourages contractors to submit proposals to deliver improved projects of the best attainable value. After award of a project, contractor proposals for cost reduction are considered and if accepted, the contractor receives a portion of the savings, up to a maximum of 50 percent. Even though the savings are shared, the program generates savings on active projects that can be used to offset project cost escalation or reduce cost of delivering the project. So far for fiscal year 2014, 17 VE proposals were approved resulting in MoDOT savings of \$555,000. Although with reduced project scopes there are fewer opportunities, MoDOT leaders will continue to challenge department staff and industry partners to improve the value of construction projects.

A successful VECP program will incorporate approved VECPs into future design plans, so MoDOT can realize 100 percent of the affiliated savings for future projects. VE changes implemented as MoDOT best practices are incorporated into MoDOT's Engineering Policy Guide.

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Value Engineering Changes Implemented as Best Practice

UNDER DEVELOPMENT

RESULT DRIVER:
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District Engineer

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MEASUREMENT
DRIVER:
Natalie Roark,
Bidding and Contract
Services Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the
costs to construct a variety
of common highway and
bridge construction proj-
ects including the costs for
equipment, labor and fringe
benefits and materials to
construct a project.

MEASUREMENT
AND DATA
COLLECTION:
Data is collected from
MoDOT bid opening prices.
Construction costs for 1992
are used for comparison
because that was the year
Missouri's fuel tax rate was
increased to the current rate
of 17 cents per gallon. Costs
for chip seal and minor road
one-inch asphalt resurfacing
include the pavement, traffic
control and temporary pave-
ment marking. Costs for ma-
jor highway and interstate
asphalt resurfacing include
the pavement, traffic control,
permanent pavement mark-
ing, rumble strips, pavement
repair, guardrail and signing.
New two-lane and four-lane
construction costs include
grading, drainage, pave-
ment, bridge and all inciden-
tal costs. The average cost
per square-foot of bridge is
tabulated and applied to the
area of the average bridge
on the state system to sim-
plify comparison.

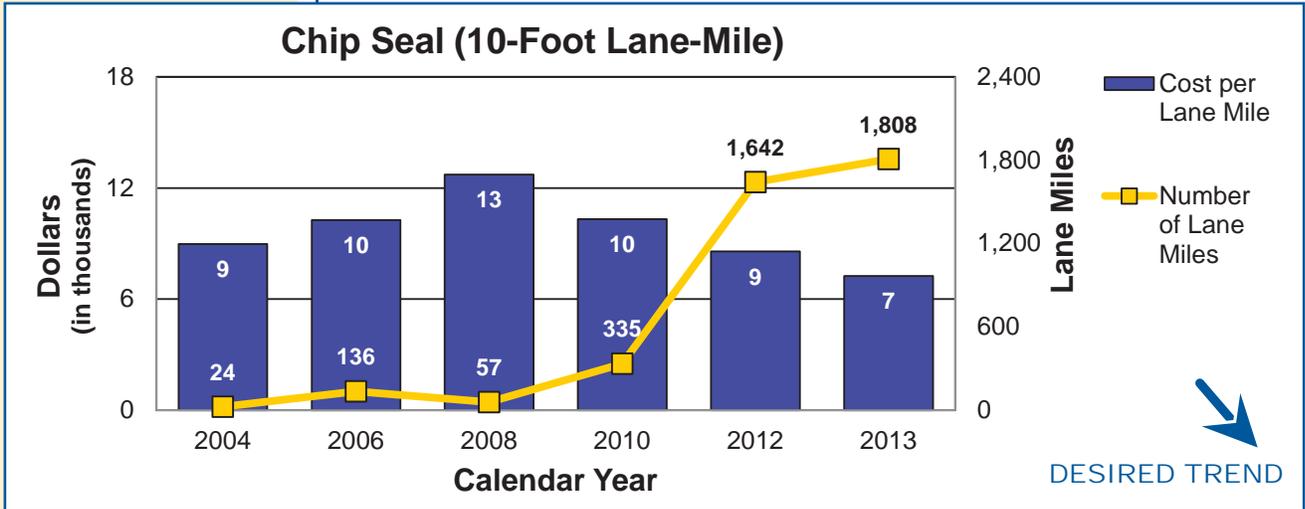
Average highway lane-mile and bridge construction costs-4f

A great many factors affect the cost of road and bridge projects, some that can be managed by MoDOT and others that are affected by the economy. For example, Missouri's highway system has long depended on fuel taxes, but now people drive less and vehicles are more fuel efficient. Meanwhile, inflation has increased the cost of projects, resulting in reduced purchasing power for MoDOT. Minor road asphalt resurfacing costs have increased in recent years due to a combination of increased fuel, oil and material costs. Overall, the prices of asphalt, concrete and steel are double and triple what they were 20 years ago, when fuel taxes were last raised.

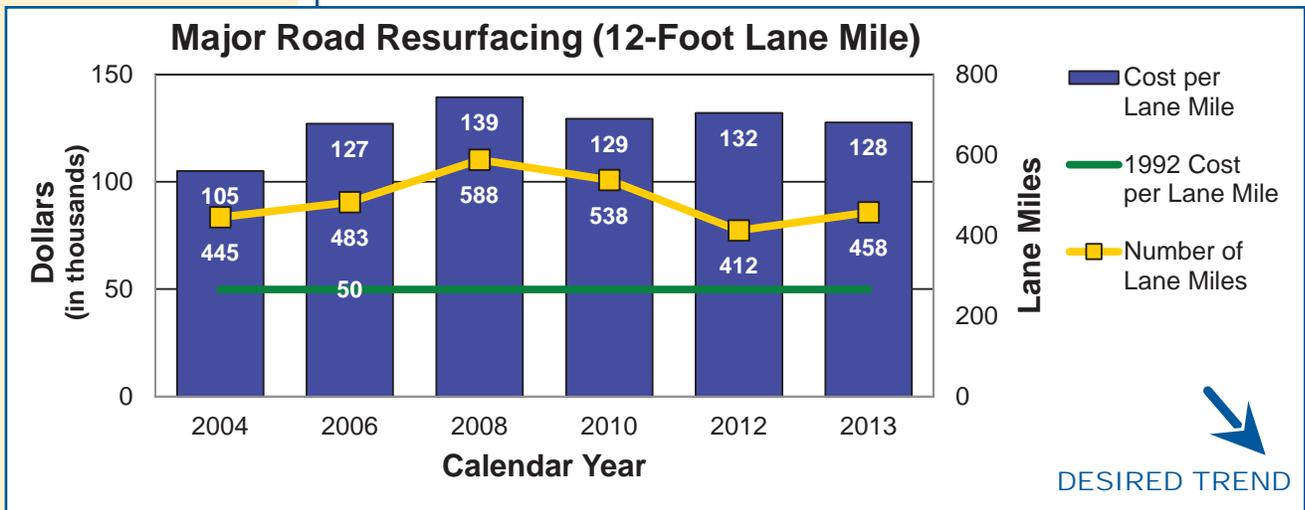
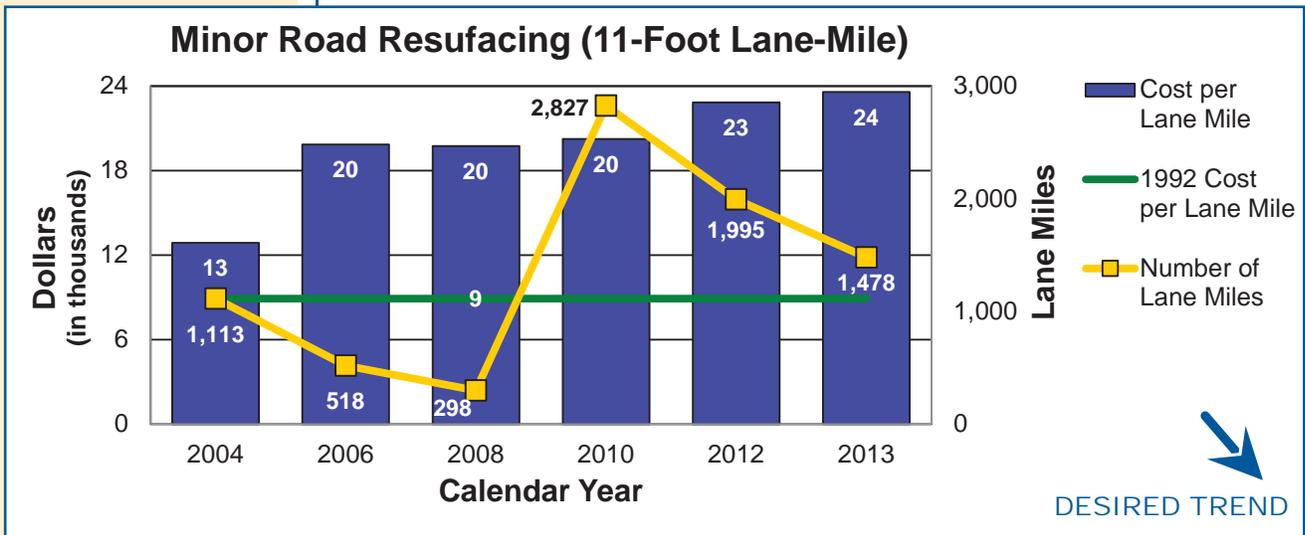
With MoDOT's construction program having dropped from \$1.3 billion in 2009 to \$685 million in fiscal year 2014, few complex two- and four-lane projects have been available for contractors to bid. For the larger, more robust projects, MoDOT continues to partner with industry to allow flexibility and encourage innovation while strategically scheduling bid openings to spread out the amount of work and financial obligation for the bidders. With decreasing revenue and increasing costs, MoDOT is challenged to make improvements to the existing system. In time, MoDOT will be challenged just to maintain the system of roads and bridges Missourians enjoy today.



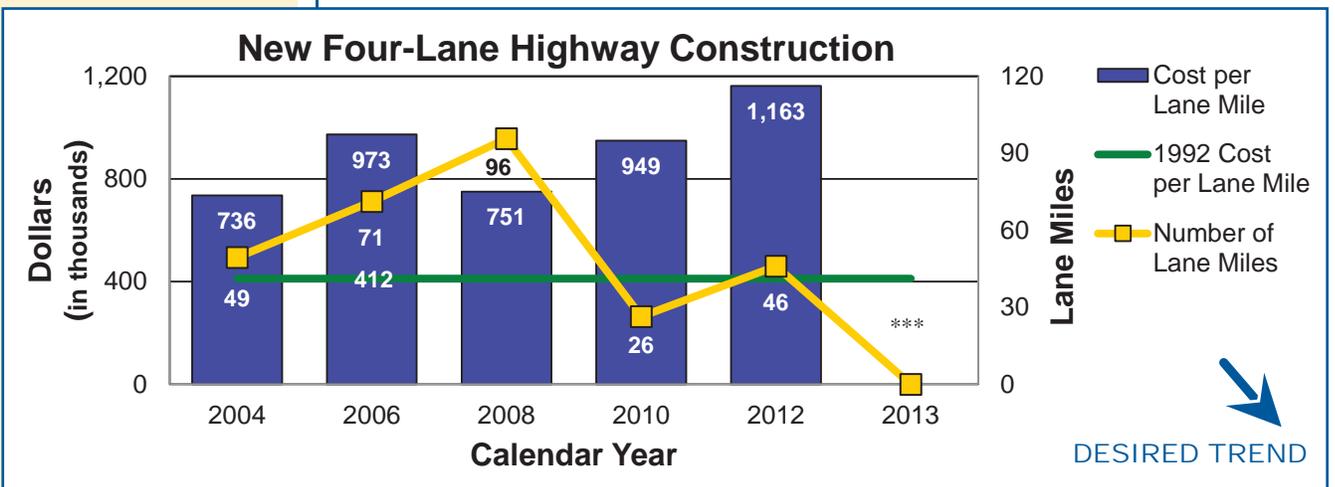
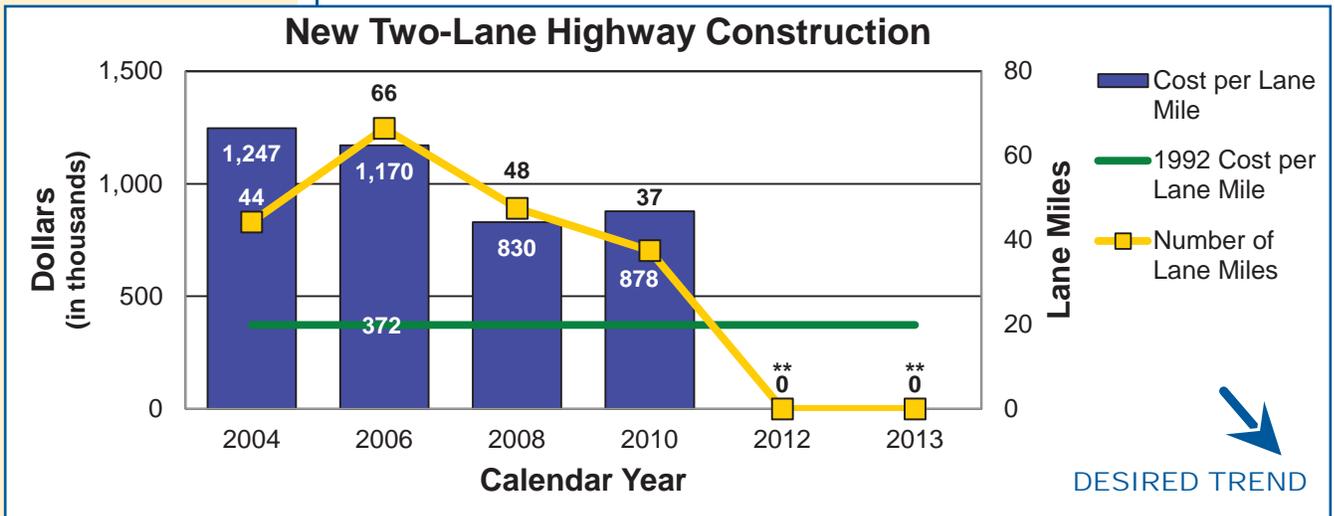
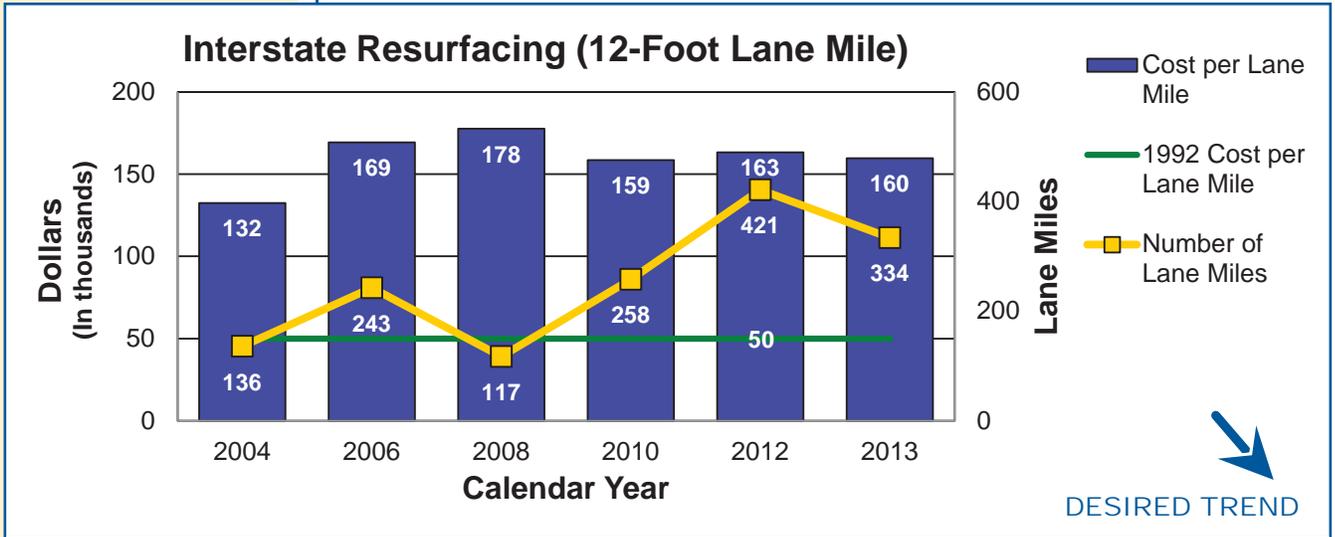
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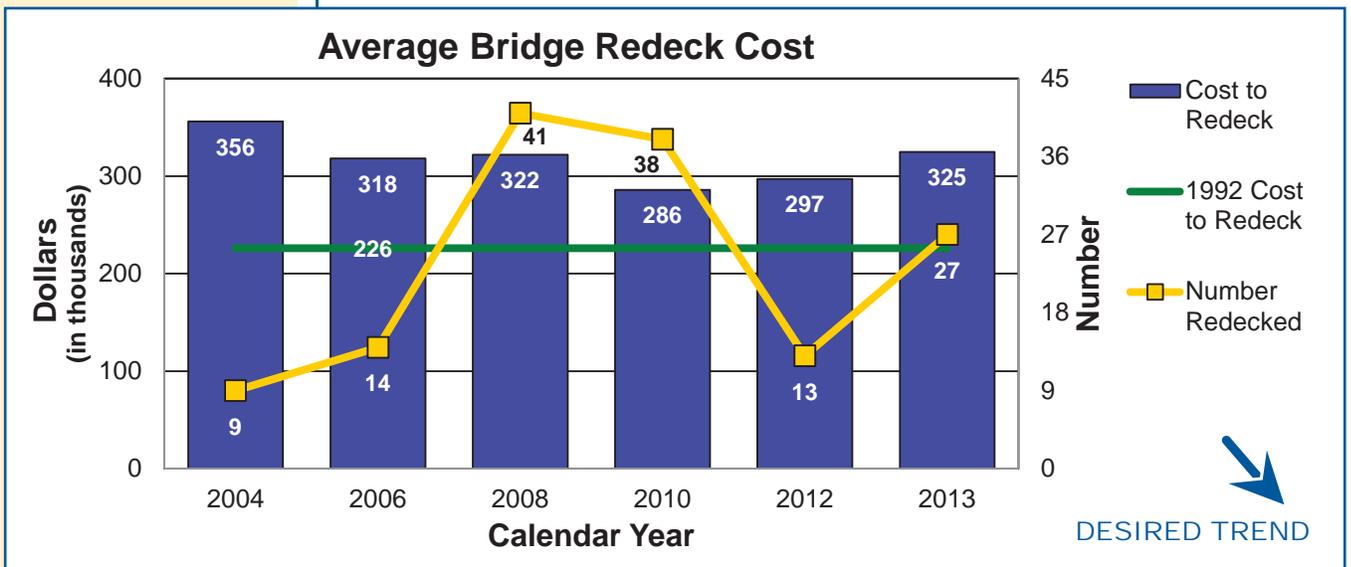
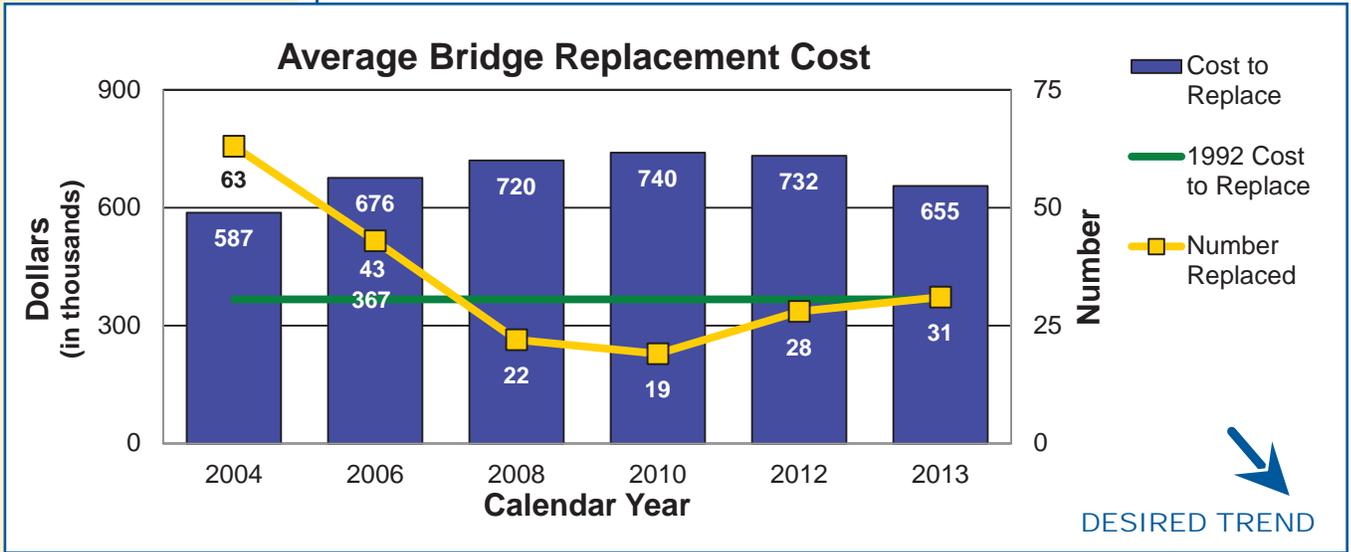
Note: No contract chip seal projects in 1992.



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